What is claimed is:

1. An electro-luminescence display device comprising:

pixels provided between data lines and scan lines, each of the pixels including a light-emitting cell driven with a current; and

a current controller for temporarily increasing the current for subsequent driving of the light-emitting cell.

2. The electro-luminescence display device according to claim 1, further comprising:

a data driver to apply a data signal to the current controller;

a light-emitting cell controller to control the current applied to the light-emitting cell; and

a timing controller to apply the data signal to the data driver, and generating a first selection signal, a second selection signal, a third selection signal, a third selection signal, a fourth selection signal, a fifth selection signal, a sixth selection signal, a pre-charging selection signal and a pre-charging enable signal.

3. The electro-luminescence display device according to claim 1, wherein the current controller includes:

a plurality of current sample holder portions connected to the data driver and the data line; and

a plurality of pre-charging current suppliers connected between supply voltage lines and

the data lines to apply a pre-charging current to the data lines.

4. The electro-luminescence display device according to claim 3, wherein each of the plurality of current sample holder portions includes:

a first sample holder portion having first to third sample holders commonly connected to an output line of the data driver to sample and store the data signals applied to the data lines whenever a scanning pulse is applied to the Nth scan line, wherein N is an integer;

a second sample holder portion having fourth to sixth sample holders commonly connected to the output line of the data driver to sample and store the data signals applied to the data lines whenever the scanning pulse is applied to the (N+1)th scan line; and

a multiplexor array connected to each of the first sample holder portion, second sample holder portion and the data line to selectively connect each output line of the first and second sample holder portion to the data line in response to the pre-charging selection signal.

5. The electro-luminescence display device according to claim 4, wherein the first to third sample holders are sequentially driven in response to the first to third selection signals, and the fourth to sixth sample holders are sequentially driven in response to the fourth to sixth selection signals.

6. The electro-luminescence display device according to claim 5, wherein each of the first to sixth sample holders includes:

a sampler to sample and store the data signal connected to the output line of the data driver, a ground voltage source and the multiplexor array;

a first selection switch connected between the output line of the data driver and the sampler to be switched by one of the first to sixth selection signals;

a second selection switch connected between a node positioned between the first selection switch and the sampler and the sampler to be switched by the selection signal applied to the first selection switch; and

a third selection switch connected to the sampler and the output line connected to the multiplexor array to be switched by the pre-charging enable signal.

7. The electro-luminescence display device according to claim 6, wherein the sampler includes:

a first sampling switch connected between the first selection switch and the ground voltage source;

a second sampling switch connected to a gate terminal of the first sampling switch, the ground voltage source and the third selection switch;

a sampling capacitor connected between each gate terminal of the first and second sampling switches and the ground voltage source to store the data signal; and

a third sampling switch connected to each gate terminal of the first and second sampling switches, the ground voltage source and the output line connected to the multiplexor array.

8. The electro-luminescence display device according to claim 7, wherein the second sampling

switch has a relatively larger W/L dimension ratio than the first or third sampling switch.

9. The electro-luminescence display device according to claim 4, wherein the first sample holder portion sinks a current from the pre-charging current supplier into the ground voltage source when the pre-charging enable signal is being applied with the aid of the data signal sampled and stored whenever a scanning pulse is applied to the Nth scan line whenever the scanning pulse is applied to the (N+1)th scan line, thereby temporarily increasing a current fed to the light-emitting cell largely; and

the second sample holder portion sinks a current from the pre-charging current supplier into the ground voltage source when the pre-charging enable signal is being applied with the aid of the data signal sampled and stored whenever a scanning pulse is applied to the (N+1)th scan line whenever the scanning pulse is applied to the Nth scan line, thereby temporarily increasing a current fed to the light-emitting cell.

10. The electro-luminescence display device according to claim 5, wherein each of the pre-charging current supplier includes:

a current switch connected between the supply voltage source and the data line to be switched by the pre-charging enable signal;

a diode-type current supply switch connected between the current switch and the supply voltage source.

11. The electro-luminescence display device according to claim 10, wherein each of the pixels includes:

a driving thin film transistor connected between the supply voltage source and the light-emitting cell;

a first switching thin film transistor connected to the scan line and the data line;

a conversion thin film transistor connected to the supply voltage source, the driving thin film transistor and the first switching thin film transistor to form a current mirror with respect to the driving thin film transistor;

a storage capacitor connected between each gate terminal of the conversion and driving thin film transistors and the supply voltage source; and

a second switching thin film transistor connected to each gate terminal of the conversion and driving thin film transistors, the scan line and the first switching thin film transistor.

12. The electro-luminescence display device according to claim 11, wherein the current supply switch has a relatively larger W/L dimension ratio than a W/L dimension ratio of the conversion thin film transistor.

13. The electro-luminescence display device according to claim 4, wherein the multiplexor array connects the second sample holder portion to the data line in a time interval when a scanning pulse is applied to the Nth scan line while connecting the first sample holder portion to the data line in a time interval when the scanning pulse is applied to the (N+1)th scan line in

response to the pre-charging selection signal.

14. An electro-luminescence display device comprising:

an electro-luminescence panel including a pixel defined by a data line to receive data signals crossing a scan line to receive scan signals; and

a current amplifier connected to one terminal of the data line to apply an amplified current made by amplifying an input current prior to an input of the data signals to the data line.

15. The electro-luminescence display device according to claim 14, further comprising:

a driving circuit to output the data signal and an input current of the current amplifier.

16. The electro-luminescence display device according to claim 14, further comprising:

a pre-charger connected to other terminal of the data line for applying a pre-charging current to the data line.

17. The electro-luminescence display device according to claim 16, wherein the pre-charger includes:

first pre-charging transistor having a first gate electrode, a first source electrode and a first drain electrode; and

second pre-charging transistor having a second gate electrode, a second source electrode

and a second drain electrode,

wherein the first source electrode is connected to a high voltage source; the first gate electrode is connected to the first drain electrode; the first drain electrode is connected to the second source electrode; the second gate electrode is supplied with a pre-charging signal turned on during a certain time prior to an input of the data signal; and the second drain electrode is connected to the data line.

18. The electro-luminescence display device according to claim 14, wherein the electro-luminescence panel includes:

first switching thin film transistor connected to the data line;

second switching thin film transistor connected to the scan line;

first driving thin film transistor and second driving thin film transistor connected to the second switching thin film transistor;

a storage capacitor connected to the second switching thin film transistor;

a power line to supply power to the second driving thin film transistor; and

a light-emitting cell supplied with the power via the second driving thin film transistor.

19. The electro-luminescence display device according to claim 14, wherein the current amplifier includes:

first switch and second switch connected in parallel to the data line;

a current amplifying unit connected to the first switch; and

a current source connected to the current amplifying unit and the second switch.

20. The electro-luminescence display device according to claim 19, wherein the first switch is switched in response to the pre-charging signal while the second switch is switched in response to an inverted pre-charging signal having a polarity contrary to the pre-charging signal.

21. The electro-luminescence display device according to claim 20, wherein, when the pre-charging signal is turned into an ON signal, the amplified current is equal to the pre-charging signal or is equal to a sum of the pre-charging signal with a pixel current flowing in the first switching thin film transistor.

22. The electro-luminescence display device according to claim 19, wherein the current amplifying unit includes:

first amplifying transistor having a first gate electrode, a first source electrode and a first drain electrode;

second amplifying transistor having a second gate electrode, a second source electrode and a second drain electrode;

third amplifying transistor having a third gate electrode, a third source electrode and a third drain electrode; and

fourth amplifying transistor having a fourth gate electrode, a fourth source electrode and a fourth drain electrode;

wherein the first and second source electrodes are connected to a high voltage source; the first drain electrode is connected to the first gate electrode, second gate electrodes and the current source; the third source electrode is connected to the second drain electrode, the third gate electrode, the fourth gate electrode; the third drain electrode and fourth drain electrode are connected to a low voltage source; and the fourth source electrode is connected to the first switch.

23. The electro-luminescence display device according to claim 22, wherein W/L dimension ratios of the first to fourth amplifying transistors are set such that currents flowing in the second and third amplifying transistors are larger than a current flowing in the first amplifying transistor and a current flowing in the fourth amplifying transistor is larger than the currents flowing in the second and third amplifying transistors.

24. The electro-luminescence display device according to claim 18, wherein the current amplifier includes:

a current amplifying unit connected to the data line; and

a current source connected to the current amplifying unit.

25. The electro-luminescence display device according to claim 24, wherein the current amplifying unit includes:

first amplifying transistor having a first gate electrode, a first source electrode and a first

drain electrode;

second amplifying transistor having a second gate electrode, a second source electrode and a second drain electrode;

third amplifying transistor having a third gate electrode, a third source electrode and a third drain electrode;

fourth amplifying transistor having a fourth gate electrode, a fourth source electrode and a fourth drain electrode;

fifth amplifying transistor having a fifth gate electrode, a fifth source electrode and a fifth drain electrode; and

a first switch,

wherein the first and second source electrodes are connected to a high voltage source, the first drain electrode is connected to the first gate electrode, the second gate electrode and the current source; the third source electrode is connected to the second drain electrode and the third to fifth gate electrodes; the third to fifth drain electrodes are connected to a low voltage source; a terminal of the first switch is connected to the fourth drain electrode and the fifth drain electrode; and the fifth source electrode is connected to the data line.

26. The electro-luminescence display device according to claim 25, wherein the first switch is switched in response to the pre-charging signal.

27. The electro-luminescence display device according to claim 26, wherein, when the pre-

charging signal is turned into an ON signal, the amplified current is equal to a sum of the pre-charging signal with a pixel current flowing in the first switching thin film transistor.

28. The electro-luminescence display device according to claim 27, wherein W/L dimension ratios of the first to fifth amplifying transistors are set such that currents flowing in the second and third amplifying transistors are larger than a current flowing in the first amplifying transistor; a current flowing in the fourth amplifying transistor is larger than the currents flowing in the second and third amplifying transistors and is equal to the pre-charging current; and a current flowing in the fifth amplifying transistor is equal to the pixel current.

29. The electro-luminescence display device according to claim 16, wherein the pre-charger includes:

first pre-charging transistor having a first gate electrode, a first source electrode and a first drain electrode;

second pre-charging transistor having a second gate electrode, a second source electrode and a second drain electrode; and

wherein the first source electrode is connected to a low voltage source, the first gate electrode is connected to the drain electrode, the first drain electrode is connected to the second source electrode, the second gate electrode is supplied with a pre-charging signal turned on during a certain time prior to an input of the data signal, and the second drain electrode is connected to the data line.

30. The electro-luminescence display device according to claim 29, wherein the electro-luminescence panel includes:

first and second switching thin film transistors connected to the data lines and the scan lines;

first and second driving thin film transistors connected to the second switching thin film transistor;

a storage capacitor connected to the second switching thin film transistor;

a power line to supply power to the second driving thin film transistor; and

a light-emitting cell supplied with the power via the second driving thin film transistor.

31. The electro-luminescence display device according to claim 30, wherein the current amplifier includes:

first and second switches connected, in parallel, to the data line;

a current amplifying unit connected to the first switch; and

a current source connected to the current amplifying unit and the second switch.

32. The electro-luminescence display device according to claim 31, wherein the first switch is switched in response to the pre-charging signal while the second switch is switched in response to an inverted pre-charging signal having a polarity contrary to the pre-charging signal.

33. The electro-luminescence display device according to claim 32, wherein, when the pre-charging signal is turned into an ON signal, the amplified current is equal to the pre-charging signal or is equal to a sum of the pre-charging signal with a pixel current flowing in the first switching thin film transistor.

34. The electro-luminescence display device according to claim 30, wherein the current amplifier includes:

a current amplifying unit connected to the data line; and

a current source connected to the current amplifying unit.

35. The electro-luminescence display device according to claim 34, wherein the current amplifying unit includes:

first amplifying transistor having a first gate electrode, a first source electrode and a first drain electrode;

second amplifying transistor having a second gate electrode, a second source electrode and a second drain electrode;

third amplifying transistor having a third gate electrode, a third source electrode and a third drain electrode;

fourth amplifying transistor having a fourth gate electrode, a fourth source electrode and a fourth drain electrode;

fifth amplifying transistor having a fifth gate electrode, a fifth source electrode and a fifth

drain electrode; and

a first switch,

wherein the first and second source electrodes are connected to a low voltage source; the first drain electrode is connected to the first gate electrode, the second gate electrode and the current source; the third drain electrode is connected to the second drain electrode and the third to fifth gate electrodes; the third to fifth source electrodes are connected to a high voltage source; a terminal of the first switch is connected to the fourth drain electrode and the fifth electrode; and the fifth source electrode is connected to the data line.

36. The electro-luminescence display device according to claim 35, wherein the first switch is switched in response to the pre-charging signal.

37. The electro-luminescence display device according to claim 36, wherein, when the pre-charging signal is turned into an ON signal, the amplified current is equal to a sum of the pre-charging signal with a pixel current flowing in the first switching thin film transistor.

38. The electro-luminescence display device according to claim 37, wherein W/L dimension ratios of the first to fifth amplifying transistors are set such that currents flowing in the second and third amplifying transistors are larger than a current flowing in the first amplifying transistor; a current flowing in the fourth amplifying transistor is larger than the currents flowing in the second and third amplifying transistors and is equal to the pre-charging current; and a

current flowing in the fifth amplifying transistor is equal to the pixel current.

39. The electro-luminescence display device according to claim 16, wherein the current amplifier and the pre-charger are built into the electro-luminescence panel.

40. A method of driving an electro-luminescence display device having pixels at intersections between data lines and scan lines and including light-emitting cells driven with a current, the method comprising the steps of:

sequentially sampling data signals applied to the data lines in a time interval when a scanning pulse is applied to the Nth scan line and storing them into a plurality of first sample holders; and

temporarily increasing a current flowing in the light-emitting cell largely using the data signals stored in the plurality of first sample holders in a time interval when the scanning pulse is applied to the (N+1)th scan line.

41. The method according to claim 40, wherein the step of temporarily increasing the current flowing in the light-emitting cell largely includes:

pre-charging the currents flowing in the data line and the light-emitting cell in such a manner to be temporarily increased largely.

42. The method according to claim 41, further comprising the steps of:

sequentially sampling the data signals applied to the data lines in a time interval when the scanning pulse is applied to the (N+1)th scan line to store them into a plurality of second sampling holders; and

temporarily increasing a current flowing in the light-emitting cell largely using the data signals stored in the plurality of first sample holders in a time interval when the scanning pulse is applied to the Nth scan line.

43. The method according to claim 42, further comprising the step of:

generating a plurality of selection signals, a pre-charging selection signal and a pre-charging enable signal.

44. The method according to claim 43, wherein the plurality of first and second sample holders are selectively connected to the data lines in response to the pre-charging selection signal.

45. The method according to claim 44, wherein the plurality of first sample holders are connected to the data lines in response to the pre-charging selection signal in a time interval when the scanning pulse is applied to the (N+1)th scan line; and

the plurality of second sample holders are connected to the data lines in response to the pre-charging selection signal in a time interval when the scanning pulse is applied to the Nth scan line.

46. The method according to claim 43, further comprising the step of:

applying a relatively large current to the data lines in response to the pre-charging enable signal.

47. The method according to claim 46, wherein a first path through which a relatively small current flows and a second path through which a relatively large current flows in accordance with the pre-charging enable signal are formed at each of the first and second sample holders.

48. A method of driving an electro-luminescence display device, comprising the steps of:

selecting scan lines of an electro-luminescence panel to input gate signals;

inputting data signals to data lines crossing the scan lines to define pixels; and

inputting an amplifying current to the data lines prior to an input of the data signal such that the data line has a potential close to the data signal.

49. The method according to claim 48, wherein the amplifying current is input by a pre-charger and a current amplifier connected to the data line.

50. The method according to claim 49, wherein the pre-charger and the current amplifier are built into the electro-luminescence panel.